OZONE-DEPLETING SUBSTANCES

ALTERNATIVES AND SUPPLIERS LIST

DRAFT

Ozone Protection Programs Section
Commercial Chemicals Evaluation Branch
Environment Canada
September 1998

Environment Canada does not promote, recommend nor endorse the suppliers or the alternatives listed in this report since no environmental impact assessment was done of those alternatives by the department. Environment Canada offers this document to help Canadians identify products that could be considered in selecting alternatives to their ODS uses. This list should not be considered as a complete listing of all the alternatives available. Environment Canada is not responsible for errors or omissions, which may have occurred. Use of the alternatives in this listing may require modifications or replacement of existing equipment in order to maintain safety and performance. Consult with the equipment manufacturer and/or alternative supplier for specific guidelines.

This list, and the fact that a product is included in the list, should not be referred to in any advertisement or promotion.

If you have any comments regarding the contents of this document, please contact Alex Cavadias at (819) 953-1132 or email: alex.cavadias@ec.gc.ca.

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Foreword

The need for alternatives and substitutes to ozone-depleting substances (ODS) is becoming critical in Canada's efforts to reduce and eventually eliminate ODS emissions. This report offers a listing of possible alternatives and of the manufacturers or suppliers of these substitutes.

The alternatives included in the report are those that Environment Canada considers technically feasible and currently available, or those that will be available in the near future. This document is a compilation of the information that manufacturers or suppliers provided to Environment Canada.

The purpose of the lists is to provide information on potential alternatives to the users of ODS. Selection of any alternative requires knowledge of many properties including performance requirements, environmental effects, compatibility with materials, and safety considerations. Environment Canada suggests that users contact suppliers listed in this publication to obtain more information about product specifications and characteristics.

Within the report is a column entitled "Notes" which identifies some factors to consider when selecting an alternative. These factors are represented by the following symbols:

- This alternative has a an ozone depleting potential (ODP), HCFCs, and are only considered an intermediate replacement to CFCs. They have been added to the list of controlled substances under the Montreal Protocol and they will be phased out in Canada by the year 2020. When an alternative with no ODP is available, the zero ODP alternative should be preferred (assuming all other factors are equal).

- This alternative has a global warming potential at least 100 times greater than CO_2 and steps may be taken in the future to regulate emissions.

- This alternative was found to be toxic under the Canadian Environmental Protection Act and steps may be taken in the future to regulate emissions.

- This alternative is a volatile organic compound (VOC). It may be necessary to control its emissions within smog precursor control programmes. Verify municipal or provincial requirements.

- This alternative will generate wastewater that may need to be treated. Verify municipal or provincial requirements.

- This alternative has an extremely long atmospheric lifetime and possesses the potential to contribute to global climate change. It should be restricted to uses that have no other alternative.

The report will be updated from time to time, according to information provided by manufacturers and distributors. Please send your corrections and/or additions to the list at the following address:

Head
Ozone Protection Programmes Section
Commercial Chemicals Evaluation Branch
Environment Canada
14th Floor, Place Vincent Massey
Ottawa, ON K1A 0H3

Fax: (819) 953-4936

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ASHRAE Refrigerants Blend Classifications

	HCFC			HFC							HC				PFC		
R-	22	124	142b	23	32	125	134a	143	143a	152a	218	290	600a	1270	116	218	C318
R-401b	X	X								X							
R-402a	X					X						X					
R-402b	X					X						X					
R-403b	X											X				X	
R-404a						X	X	X									
R-405a	X		X							X							X
R-406a	X		X										X				
R-407a					X	X	X										
R407b					X	X	X										
R-407c					X	X	X										
R-407d					X	X	X										
R-408a	X					X			X								
R-409a	X	X	X														
R-409b	X	X	X														
R-410a					X	X											
R-411a	X									X				X			
R-412a	X		X								X						
R-416a		X					X						X				
R-507a						X			X								
R-508a				X											X		
R-508b				X											X		
R-509a	X															X	

Notes:

- 400 Series are zeotropic blends
- 500 Series are azetropic blends
- HCs are Hydrocarbons
- R-717 is ammonia
- HCFCs are Hydrochlorofluorocarbons
- HFCs are Hydrofluorocarbons
- PFCs are Perfluorocarbons

Sector:		Adhesives		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**

Use Sector

Sector: ***Adhesives***

binding of porous, nonporous and moist surfaces unsuitable for non structural bonding of rubbers & many plastics

MCF	water based adhesive: solutions, latexes, emulsions		3M

bookbinding, packing, textiles and product assembly-limited applications

MCF	hot melt adhesives: polyolefin & polyamide/polyester rosins, thermoplastic elastomers		3M

consumer products, transport packaging, medical and dental uses, electronics and communications applications

MCF	radiation curing (UV, IR, electron beam, gamma, x-ray) binding agents: acrylic, epoxy urathane, etc.		

laminating

MCF	high solid adhesives using existing polyester & urethane technology		3M

ODS	Alternative	Notes	Trade Name	Supplier
Sector:	***Aerosols***			
antistatic products				
CFC-113	alcohols		Chemwipes Static Clean	Chemtronics
	alcohols		Static Free SD-28 Static Clean	Chemtronics
	alcohols		Antistatic Screen & Keyboard Cleaner	MG
	aqueous		SD-7 Plast-N-Glass	Chemtronics
	aqueous		Static Free SD-34	Chemtronics
cleaning electronic & electromechanical instruments				
HCFC-141B	alcohols		Safety Wash	MG
	alcohols		Nu-trol Contact Cleaner with Lubrication	MG
	alcohols		Magnetic Head/Disc Cleaner	MG
	alcohols		Isopropanol Cleaner	MG
	HFE-7100		HFE 7100	3M
	HFE-71DE		HFE 71DE	3M
MCF	aliphatic hydrocarbons		TPC Solvent	Drew Chemical
	methylene chloride		Methoklone GR	ICI
	methylene chloride		Rubber Renue	MG
cleaning electronic equipment				
CFC-11	high flash, terpene alcohol blend		Tarksol SC 9000	Terpene Tech.
	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
	methylene chloride		Methylene Chloride	Dow
CFC-113	perchloroethylene		Perc	Dow
	trichloroethylene		Neu-Tri	Dow
CFC-12	HFC-134a		Dymel 134a	DuPont
	HFC-134a		Genetron 134a	AlliedSignal
	HFC-134a		Klea 134A	ICI
	high flash, terpene alcohol blend		Tarksol SC 9000	Terpene Tech.
	hydrocarbons		aerosol products	MG
	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
	methylene chloride		Methylene Chloride	Dow
MCF	perchloroethylene		Perc	Dow
	trichloroethylene		Neu-Tri	Dow
cleaning electronic equipment & electromechanical instruments				
CFC-113	trichloroethylene		Neu-Tri	Dow
MCF	trichloroethylene		Neu-Tri	Dow

☼ = High Global Warming Potential = CEPA Toxic = Volatile Organic Compound

 = Waste Water = contains HCFC (ODS) = Long Atmospheric Life

Sector:		Aerosols		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
cleaning electronics & electromechanical instruments				
HCFC-141B	HFC-4310	☼	Vertrel	DuPont
conformal coatings and masks				
MCF	alcohols	◎	Konform SR 2000	Chemtronics
MCF	alcohols	◎	AR 2000	Chemtronics
	alcohols	◎	UR 2000	Chemtronics
	petroleum solvents	◎	Clear Lacquer Conformal Coating	MG
	petroleum solvents	◎	Pure Silicone Conformal Coating	MG
corrosion inhibitor (as a carrier or propellant)				
CFC-11	oil & resin-based	◎	LPS HardCoat Corrosion Protectant	LPS
	oil & wax-based	◎	LPS 3 Heavy-Duty Rust Inhibitor	LPS
	zinc-based		LPS Cold Galvanize	LPS
MCF	petroleum/phenyl ether	◎	Super PPE	MG
	zinc-based		LPS Cold Galvanize	LPS
	zinc-based		LPS Cold Galvanize	LPS
dust away products				
CFC-11	HCF-134a	☼		TRJ Control
	HFC-134a	☼		Rawn
	HFC-134a	☼	Dust "Pro Series 2000"	Peca
	HFC-134a	☼	Dust Away	Tomen
CFC-114	HFC-134a	☼	Ultrajet 2000	Chemtronics
CFC-12	HCF-134a	☼		TRJ Control
	HFC-134a	☼	Ultrajet 2000	Chemtronics
	HFC-134a	☼		Rawn
	HFC-134a	☼	Dust Away	Tomen
	HFC-134a	☼	CFC Free 70 psi	Chemtronics
	HFC-134a	☼	Ultrajet 2000	Chemtronics
	HFC-134a	☼	Envi-Ro-Tech 1671	Tech Spray
	HFC-134a	☼	Klea 134A	ICI
	HFC-134a	☼	Dymel 134a	DuPont
	HFC-134a	☼	Dust "Pro Series 2000"	Peca
HCFC-22	HCF-134a	☼		TRJ Control
	HFC-134a	☼	Forane 134a	Elf Atochem
	HFC-134a	☼	Super Duster 134 Plus	MG
	HFC-134a	☼	Klea 134A	ICI
	HFC-134a	☼	Dymel 134a	DuPont
	HFC-134a	☼	Envi-Ro-Tech 1671	Tech Spray
	HFC-134a	☼	CFC Free 70 psi	Chemtronics
	HFC-134a	☼		Rawn
	HFC-134a	☼	Envi-Ro-Tech 1671	Tech Spray
R-502	HFC-134a	☼	Envi-Ro-Tech 1671	Tech Spray
flux removers				
CFC-113	alcohols	◎	Flux-Off NR 2000	Chemtronics

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Sector:		Aerosols		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
	alcohols/petroleum		Heavy Duty Flux Remover	MG
	HFC-4310		Vertrel	DuPont
	HFE-7100		HFE 7100	3M
	hydrocarbons		CFC-Free Flux-Off 2000	Chemtronics
CFC-113	perchloroethylene		Perc	Dow
MCF	alcohols		Flux-Off NR 2000	Chemtronics
	alcohols/petroleum		Heavy Duty Flux Remover	MG
	HFC-4310		Vertrel	DuPont
	HFE-7100		HFE 7100	3M
	hydrocarbons		CFC-Free Flux-Off 2000	Chemtronics
	perchloroethylene		Perc	Dow
freezing chilling				
CFC-11	HFC-134a		Dymel 134a	DuPont
CFC-12	HFC-134a		Dymel 134a	DuPont
HCFC-22	HFC-134a		Dymel 134a	DuPont
freezing/chilling				
CFC-11	HFC-134a		Freez-it Antistat	Chemtronics
	HFC-134a		Freez-it E Series 1202	Chemtronics
	HFC-134a		Freez-it 2000	Chemtronics
	HFC-134a			Rawn
	HFC-134a		Envi-Ro-Tech 1672	Tech Spray
	HFC-134a		Forane 134a	Elf Atochem
	HFC-134a		Klea 134A	ICI
	HFC-134a		Genetron 134a	AlliedSignal
CFC-12	HFC-134a		Klea 134A	ICI
	HFC-134a		Genetron 134a	AlliedSignal
	HFC-134a		Envi-Ro-Tech 1672	Tech Spray
	HFC-134a		Freez-it 2000	Chemtronics
	HFC-134a		Freez-it Antistat	Chemtronics
	HFC-134a		Freez-it E Series 1202	Chemtronics
	HFC-134a			Rawn
	HFC-134a		Forane 134a	Elf Atochem
HCFC-22	HFC-134a		Envi-Ro-Tech 1672	Tech Spray
	HFC-134a		Forane 134a	Elf Atochem
	HFC-134a		Freez-it Antistat	Chemtronics
	HFC-134a			Rawn
	HFC-134a		Klea 134A	ICI
	HFC-134a		Freez-it 2000	Chemtronics
	HFC-134a		Genetron 134a	AlliedSignal
	HFC-134a		Freez-it E Series 1202	Chemtronics
inflating tires				
CFC-11			70 psi E Series 1202	Chemtronics
			70 psi E Series 1202	Chemtronics
			Ultrajet E Series 1202	Chemtronics

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Sector: **Aerosols**

ODS	Alternative	Notes	Trade Name	Supplier
CFC-12			70 psi E Series 1202	Chemronics
			Ultrajet E Series 1202	Chemtronics
lubricants/penetrants (as a carrier or propellant)				
CFC-11	oil-based		LPS 1 Greaseless Lubricant	LPS
	oil-based		LPS 2 Industrial Strength	LPS
	oil/alcohols		Nu-trol Cleaner with lubrication	MG
	silicone-based		LPS Heavy-Duty Silicone Lubricant	LPS
	silicones/alcohols		Contact Cleaner with Silicones	MG
CFC-113	HFE-7100		HFE 7100	3M
	HFE-71DE		HFE 71DE	3M
	oil-based		LPS 1 Greaseless Lubricant	LPS
HCFC-141B	HFE-71DE		HFE 71DE	3M
lubricants/penetrants (as carrier propellant)				
CFC-113	HFC-4310		Vertrel	DuPont
pharmaceutical propellant				
CFC-12	HFC-134a		Zephex 134A	ICI
	HFC-134a		Suva 134a	DuPont
	HFC-134a		Formacel Z-4	DuPont
	HFC-134a		Genetron 134a	AlliedSignal
	HFC-134a		Forane 134a	Elf Atochem
precision cleaning solvents				
CFC-113	alcohols		Head Cleaner II	Chemtronics
	HFC-4310		Vertrel	DuPont
	hydrocarbons		CFC Tun-O-Wash	Chemtronics
	hydrocarbons		CFC Free Electro-Wash 2000	Chemtronics
	hydrocarbons		Chem-Solv	Chemtronics
	hydrocarbons		Kontact Restorer 2000	Chemtronics
	methylene chloride		Methylene Chloride	Dow
	perchloroethylene		Perc	Dow
	trichloroethylene		Neu-Tri	Dow
HCFC-141B	alcohols		Safety Wash	MG
	HFC-4310		Vertrel	DuPont
MCF	alcohols		Head Cleaner II	Chemtronics
	hydrocarbons		Chem-Solv	Chemtronics
	hydrocarbons		CFC Free Electro-Wash 2000	Chemtronics
	hydrocarbons		Kontact Restorer 2000	Chemtronics
	hydrocarbons		CFC Tun-O-Wash	Chemtronics
	methylene chloride		Methylene Chloride	Dow
	perchloroethylene		Perc	Dow
	trichloroethylene		Neu-Tri	Dow
premoistened precision wipers and pads				
CFC-113	alcohols		Chemswab	Chemtronics
	alcohols		Cold Gaurd 2000 Pad	Chemtronics

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Sector:		Aerosols		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
	alcohols		Optic Prep	Chemtronics
CFC-113	alcohols		Screen Prep	Chemtronics
	alcohols		Chempad	Chemtronics
	aqueous		Chemwipes Aqueous Cleaner/Degreaser 2000	Chemtronics
propellant				
CFC-12	HFC-134a		Reclin 134a	Hoechst
	HFC-134a		Genetron 134a	AlliedSignal
	HFC-134a		Forane 134a	Elf Atochem
	HFC-134a		Isceon 134a	Rhone Poulenc
	HFC-134a		Klea 134A	ICI
	HFC-134a		Dymel 134a	DuPont
	HFC-152a		Freon 152a	DuPont
	HFC-152a		Genetron 152a	AlliedSignal
	HFC-152a		Forane 152a	Elf Atochem
propellants in asthma inhalers				
CFC-12	breath activated mechansim		Tubular Asthma medication delivery system	Astra
	HFC-134a		Airomir	3M

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Sector: ***Coatings & Inks***

appliances, metal furniture and heavy construction equipment

MCF	high solid (containing no solvent, applied using heat)			

furniture, car electronics, hardboard, metal containers, structural steel & heavy equipment coatings

MCF	water based (containing less			

ODS	Alternative	Notes	Trade Name	Supplier
Sector:	***Fire Extinguishers***			
explosion suppression				
Halons 1301	compressed gases: N2, Ar, CO2		Inergen	Ansul
	FC-218	☼ ⌛	CEA 308	3M
	FC-3-1-10	☼ ⌛	CEA 410 (PFC 410)	3M
	gelled halocarbons/ dry chemical suspension	☼	PGA Formulations	Powsus
	HCFC-22 HCFC-123 HCFC-124 organics	◴ ☼	NAF S-III (Blend A)	N.A. Fire
	HFC-125	☼	FE 25	DuPont
	HFC-227ea	☼	Refrigerant R 227	Hoechst
	HFC-227ea	☼	FM 200	Great Lakes
	HFC-23	☼	FE 13	DuPont
	HFC-23	☼	FE-13	D.R. Brenton
	HFC-236fa	☼	FE 36	DuPont
	powdered aerosol		SFE Powdered Aerosol	Allied Defense
	water		Hi-Fog	Maroff
portable streaming agent				
Halons 1211	blend		Halotron	American Pacific
	carbon dioxide		Carbon Dioxide	Ansul
	dry chemical		Foray, Plus 50, Purple K	Ansul
	FC-218	☼ ⌛	CEA 308	3M
	FC-5-1-14	☼ ⌛	CEA 614 (PFC 614)	3M
	foam			
	foams		Ansulite, Silv-Ex	Ansul
	gelled halocarbons/ dry chemical suspension	☼	Powdered Aerosol B	Powsus
	HCFC-123	◴	Refrigerant R123	Hoechst
	HCFC-123 controlled additive	◴	Blitz III (Blend D)	N.A. Fire
	HCFC-123 HCFC-124 organics	◴ ☼	NAF P-III (Blend C)	N.A. Fire
	HCFC-123 inert gas mixture	◴	Halotron-1 (Blend B)	Buckeye Fire
	HCFC-123 inert gas mixture	◴	Halotron 1 (Blend B)	American Pacific
	HCFC-124	☼	FE 241	DuPont
	HCFC-22	◴ ☼	FE 232	DuPont
	HFC-227ea	☼	FM 200	Great Lakes
	HFC-236fa	☼ ⌛	Clean Guard	Ansul
	water			

Sector: Fire Extinguishers

ODS	Alternative	Notes	Trade Name	Supplier
Halons 1301	FC-3-1-10	☼⧖	CEA 410 (PFC 410)	3M
total flooding				
Halons 1301	carbon dioxide		Carbon Dioxide	Ansul
	compressed gases: N2, Ar, CO2		Inergen	Ansul
	dry chemical		Foray, Plus 50, Purple K	Ansul
	FC-218	☼⧖	Isceon 218	Rhone Poulenc
	FC-218	☼⧖	Genetron 218	AlliedSignal
	FC-218	☼⧖	PFC-218	ICI
	FC-218	☼⧖	Freon 218	DuPont
	FC-218	☼⧖	CEA 308	3M
	FC-3-1-10	☼⧖	CEA 410 (PFC 410)	3M
	foams		Ansulite, Jet-X	Ansul
	gelled halocarbons/ dry chemical suspension	☼	PGA Formulations	Powsus
	HCFC-124	☼	FE 241	DuPont
	HCFC-22 HCFC-123 HCFC-124 organics	◴☼	NAF S-III (Blend A)	N.A. Fire
	HFC-125	☼	Klea 125	ICI
	HFC-125	☼	Genetron 125	AlliedSignal
	HFC-125	☼	FE 25	DuPont
	HFC-227ea	☼	FM 200	D.R. Brenton
	HFC-227ea	☼	Refrigerant R 227	Hoechst
	HFC-227ea	☼	FM 200	Great Lakes
	HFC-23	☼	FE-13	D.R. Brenton
	HFC-23	☼	FE 13	DuPont
	HFC-236fa	☼	FE 36	DuPont
	powdered aerosol		SFE Powdered Aerosol	Allied Defense
	solid aerosol		Micro-K	Ansul
	water		Firescope 2000	Securiplex
	water		Hi-Fog	Maroff
	water mist	≈	Micro-Drop, Pilotex	Ansul

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≈ = Waste Water ◴ = contains HCFC (ODS) ⧖ = Long Atmospheric Life

Sector: ***Fumigants***

Note: For further information on alternative techniques, please request to the report written by Deloitte & Touche Management Consultants entitled "Methyl Bromide Alternatives, Substitutes and Recovery Systems", Guelph, Ontario, December, 1993

Pest control products must be registered under the Pest Control Products Act and must be used according to label instructions. For further information on pesticide regulation or registered pesticides, contact the Pest Management Regulatory Agency, Health Canada:
1-800-267-6315

email: pminfoserv@pomra-arla.hc-sc.gc.ca
Web site: www.hc.sc.gc.ca/pmra-arla

Sector: **Refrigeration**

Note: For this section the Ashrae classification are used for the ODS alternatives

ODS	Ashrae	Notes	Trade Name	Supplier
Sector:	***Refrigeration***			
air conditioning				
CFC-11	R-123		Forane 123	Elf Atochem
	R-123		Suva 123	DuPont
	R-123		Genetron 123	AlliedSignal
	R-123		Solkane 123	Solvay
	R-124		Suva Chill MP	DuPont
	R-124		Genetron 124	AlliedSignal
	R-22		Forane 22	Elf Atochem
	R-22		Frigen 22	Hoechst
	R-22		Isotron 22	Anco
	R-22		Arcton 22	ICI
	R-22		Genetron 22	AlliedSignal
	R-22		Sercon 22	Technical
	R-152a		Suva 152a	Dupont
	R-407c		Suva 9000	Dupont
	R-507		AZ 50	Hoechst
	R-134a		Suva 134a	DuPont
	R-134a		Klea 134A	ICI
	R-134a		Forane 134a	Elf Atochem
	R-134a		Genetron 134a	AlliedSignal
	R-410A		Suva 9100	DuPont
CFC-114	R-236fa		Suva 236fa	DuPont
CFC-12	R-142b		Isotrol 142b	Dow
	R-22		Sercon 22	Technical
	R-22		Forane 22	Elf Atochem
	R-22		Genetron 22	AlliedSignal
	R-22		Isotron 22	Anco
	R-22		Freon 22	DuPont
	R-22		Frigen 22	Hoechst
	R-22		Arcton 22	ICI
	R-409a		Genetron 409a	AlliedSignal
	R-409a		Forane 409A	Elf Atochem
	R-401A		MP 39	CJ Smith
	R-401B		MP 66	Dupont
	R-401C		Suva MP52	DuPont
	R-401A		Suva MP39	DuPont
	R-401A		Genetron MP39	AlliedSignal
	R-401b		Genetron MP66	AlliedSignal
	R-406a		R-406A	Environment
	R-402B		HP 81	Dupont
	R-402A		Genetron HP80	AlliedSignal
	R-408a		Genetron 408A	AlliedSignal

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= Waste Water = contains HCFC (ODS) = Long Atmospheric Life

Sector: **Refrigeration**

Note: For this section the Ashrae classification are used for the ODS alternatives

ODS	Ashrae	Notes	Trade Name	Supplier
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404A	☼	Suva HP62	DuPont
	R-404a	☼	Forane 404A	Elf Atochem
CFC-12	R-404A	☼	Genetron 404a	AlliedSignal
	R-507	☼	AZ 50	Hoechst
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Ecoloace	Tomen
	R-134a	☼	Suva Cold-MP	DuPont
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	Klea 134A	ICI
HCFC-22	R-411a	◴ ☼ ◉	G2018a	Greencool
	R-411b	◴ ☼ ◉	G2018b	Greencool
	R-410a	☼	Forane 410A	Elf Atochem
	R-410A	☼	Genetron AZ-20	AlliedSignal
	R-407c	☼	Genetron 407C	AlliedSignal
	R-407c	☼	Klea 407C	ICI
R-502	R-411a	◴ ☼ ◉	G2018a	Greencool
automotive air conditioning				
CFC-12	R-116	⧗	Freon 116	DuPont
	R-416a	◴ ☼ ◉	Frigc FR-12	Clean-Air
	unassigned	◴ ☼ ◉	Autofrost	Monroe Air Tech
	unassigned	◴ ☼	KCD-9452	DuPont
	unassigned	◴ ☼	KCD-9430	DuPont
	unassigned	◴ ☼	KCD-9451	DuPont
	unassigned	◴ ☼	KCD-9433	DuPont
	R-134a	☼	Suva Trans A/C	DuPont
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Reclin 134a	Hoechst
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Formacel Z-4	DuPont
	R-134a	☼	Isceon 134a	Rhone Poulenc
chiller alternatives-not in kind technology				
CFC-11	R-717	◉	Recipak	York
	R-717	◉	Recip	Cimco
		⚐	ParaFlow Absorption Chillers	York
			16DF Series	Carrier
			Absorption Chillers-direct gas fired, steam, hot water	Trane
			16JT Series	Carrier
			16JB Series	Carrier
CFC-12	R-717	◉	Recip	Cimco
	R-717	◉	Recipak	York

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Sector: **Refrigeration**

Note: For this section the Ashrae classification are used for the ODS alternatives

ODS	Ashrae	Notes	Trade Name	Supplier
			Absorption Chillers-direct gas fired, steam, hot water	Trane
R-502	R-717	◉	Ammonia	ICI
chillers				
CFC-11	R-123	◴	Forane 123	Elf Atochem
	R-123	◴	Solkane 123	Solvay
	R-123	◴	Suva Centr-LP	DuPont
	R-123	◴	Genetron 123	AlliedSignal
	R-123	◴	Arcton 123	ICI
	R-123	◴	Codepak Centrifugal Chillers	York
	R-123	◴	Refrigerant R123	Hoechst
	R-124	◴☼	Genetron 124	AlliedSignal
	R-124	◴☼	Suva 124	DuPont
	R-124	◴☼	Suva Chill MP	DuPont
	R-142b	◴☼	Isotrol 142b	Dow
	R-22	◴☼	Genetron 22	AlliedSignal
	R-22	◴☼	Frigen 22	Hoechst
	R-22	◴☼	Isotron 22	Anco
	R-22	◴☼	Arcton 22	ICI
	R-22	◴☼	Forane 22	Elf Atochem
	R-22	◴☼	Genetron 22	AlliedSignal
	R-411a	◴☼◉	G2018a	Greencool
	R-411b	◴☼◉	G2018b	Greencool
	R-407c	☼	Suva 9000	Dupont
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Klea 134A	ICI
	R-245fa	☼	Genetron 245fa	AlliedSignal
	R-410A	☼	Suva 9100	DuPont
	R-123	◴☼	Trane Centrifugal Chillers	Trane
CFC-114	R-123	◴	Suva 123	DuPont
	R-142b	◴☼	Forane 142b	Elf Atochem
	R-142b	◴☼	Isotrol 142b	Dow
	R-22	◴☼	Genetron 22	AlliedSignal
	R-22	◴☼	Frigen 22	Hoechst
	R-22	◴☼	Arcton 22	ICI
	R-22	◴☼	Isotron 22	Anco
	R-22	◴☼	Freon 22	DuPont
	R-22	◴☼	Forane 22	Elf Atochem
	R-407c	☼	Suva 9000	Dupont
	R-236fa	☼	Suva 236fa	DuPont
	R-236fa	☼	HFG-3236fa	3M
	R-410A	☼	Suva 9100	DuPont
CFC-12	R-22	◴☼	Freon 22	DuPont

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Sector: **Refrigeration**

Note: For this section the Ashrae classification are used for the ODS alternatives

ODS	Ashrae	Notes	Trade Name	Supplier
	R-22	◴☼	Genetron 22	AlliedSignal
	R-22	◴☼	Arcton 22	ICI
CFC-12	R-401B	◴☼	Suva MP66	DuPont
	R-401A	◴☼	Suva MP39	DuPont
	R-406a	◴☼◉	R-406A	Environment
	R-134a	☼	Isceon 134a	Rhone Poulenc
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	RecipPak Reciprocating Chillers	York
	R-134a	☼	CodePak Centrifugal Chillers	York
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	TurboMaster Centrifugal Chillers	York
	R-134a	☼	CodePak Screw Chillers	York
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Reclin 134a	Hoechst
	R-134a	☼	Formacel Z-4	DuPont
	R-123	◴☼	Trane Centrifugal Chillers	Trane
R-500	R-401B	◴☼	Suva MP66	DuPont
	R-134a	☼	RecipPak Reciprocating Chillers	York
	R-134a	☼	TurboMaster Centrifugal Chillers	York
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	CodePak Centrifugal Chillers	York
R-502	R-402B	◴☼◉	Suva HP81	DuPont
	R-402A	◴☼◉	Suva HP80	DuPont
	R-404A	☼	Suva HP62	DuPont
commercial refrigeration				
CFC-113	R-123	◴	Suva 123	DuPont
	R-401A	◴☼	Suva MP39	DuPont
	R-404a	☼	Forane 404A	Elf Atochem
CFC-114	R-124	◴☼	Suva 124	DuPont
	R-411b	◴☼◉	G2018b	Greencool
	R-411a	◴☼◉	G2018a	Greencool
	R-236fa	☼	Suva 236fa	DuPont
CFC-12	R-22	◴☼	Frigen 22	Hoechst
	R-22	◴☼	Formacel S	DuPont
	R-22	◴☼	Forane 22	Elf Atochem
	R-22	◴☼	Arcton 22	ICI
	R-22	◴☼	Isotron 22	Anco
	R-22	◴☼	Genetron 22	AlliedSignal
	R-22	◴☼	Freon 22	DuPont
	R-409a	◴☼	Forane 409A	Elf Atochem
	R-409a	◴☼	Genetron 409a	AlliedSignal

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Sector: **Refrigeration**

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-401B	◴☼	Genetron MP-66	AlliedSignal
	R-401A	◴☼	Suva MP39	DuPont
CFC-12	R-401B	◴☼	Suva MP66	DuPont
	R-401A	◴☼	Genetron MP39	AlliedSignal
	R-406a	◴☼◎	R-406A	Environment
	R-411b	◴☼◎	G2018b	Greencool
	R-411a	◴☼◎	G2018a	Greencool
	R-404A	☼	Suva HP62	DuPont
	R-134a	☼	Reclin 134a	Hoechst
	R-134a	☼	MP39	CJ Smith
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Formacel Z-4	DuPont
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Isceon 134a	Rhone Poulenc
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Forane 134a	Elf Atochem
CFC-13	R-23	☼	Suva 23	DuPont
	R-23	☼	Genetron 23	AlliedSignal
	R-508b	☼	Suva 95	DuPont
	R-508a	☼	Klea 508A	ICI
HCFC-22	R-403A	◴☼⧗◎	Isceon 69S	Rhone Poulenc
	R-402B	◴☼◎	Suva HP81	DuPont
	R-402B	◴☼	Genetron HP81	AlliedSignal
	R-402A	◴☼◎	Suva HP80	DuPont
	R-402A	◴☼	Genetron HP80	AlliedSignal
	R-408a	◴☼	Forane 408A	Elf Atochem
	R-408a	◴☼	Genetron 408A	AlliedSignal
	R-411a	◴☼◎	G2018a	Greencool
	R-411b	◴☼◎	G2018b	Greencool
	R-125	☼	Forane 125	Elf Atochem
	R-125	☼	Suva 125	DuPont
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-507	☼	Dupont 507	DuPont
	R-404a	☼	Forane 404A	Elf Atochem
	R-404A	☼	Genetron 404a	AlliedSignal
	R-404a	☼	Reclin 404A	Hoechst
	R-507	☼	AZ 50	Hoechst
	R-407a	☼	Klea 407A	ICI
	R-407b	☼	Klea 407B	ICI
R-500	R-22	◴☼	Freon 22	DuPont
	R-22	◴☼	Isotron 22	Anco
	R-22	◴☼	Arcton 22	ICI
	R-22	◴☼	Genetron 22	AlliedSignal
	R-22	◴☼	Frigen 22	Hoechst
	R-22	◴☼	Forane 22	Elf Atochem

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Sector: **Refrigeration**

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-22	◴ ☼	Formacel S	DuPont
	R-409a	◴ ☼	Genetron 409a	AlliedSignal
R-500	R-409a	◴ ☼	Forane 409A	Elf Atochem
	R-401A	◴ ☼	Suva MP39	DuPont
	R-401A	◴ ☼	Genetron MP39	AlliedSignal
	R-401B	◴ ☼	Suva MP66	DuPont
	R-401B	◴ ☼	Genetron MP-66	AlliedSignal
	R-507	☼	AZ 50	Hoechst
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Reclin 134a	Hoechst
	R-134a	☼	MP39	CJ Smith
	R-134a	☼	Isceon 134a	Rhone Poulenc
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	Formacel Z-4	DuPont
R-502	R-403A	◴ ☼ ⧗ ◎	Isceon 69S	Rhone Poulenc
	R-402B	◴ ☼	Genetron HP81	AlliedSignal
	R-402A	◴ ☼	Genetron HP80	AlliedSignal
	R-402B	◴ ☼ ◎	Suva HP81	DuPont
	R-402A	◴ ☼ ◎	Suva HP80	DuPont
	R-408a	◴ ☼	Forane 408A	Elf Atochem
	R-411b	◴ ☼ ◎	G2018b	Greencool
	R-411a	◴ ☼ ◎	G2018a	Greencool
	R-125	☼	Forane 125	Elf Atochem
	R-125	☼	Suva 125	DuPont
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-507	☼	Dupont 507	DuPont
	R-404a	☼	Forane 404A	Elf Atochem
	R-404a	☼	Reclin 404A	Hoechst
	R-404A	☼	Suva HP62	DuPont
	R-404A	☼	Genetron 404a	AlliedSignal
	R-407a	☼	Klea 407A	ICI
	R-407b	☼	Klea 407B	ICI
R-503	R-23	☼	Suva 23	DuPont
	R-508a	☼	Klea 508A	ICI
	R-508b	☼	Suva 95	DuPont
conversion(retrofit)				
CFC-11	R-123	◴	Forane 123	Elf Atochem
	R-123	◴	Solkane 123	Solvay
	R-123	◴	Genetron 123	AlliedSignal
	R-123	◴	Suva 123	DuPont
CFC-113	R-123	◴	Forane 123	Elf Atochem
	R-123	◴	Suva 123	DuPont
	R-123	◴	Genetron 123	AlliedSignal

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Sector: **Refrigeration**

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-401B	◴ ☼	Suva MP66	DuPont
	unassigned	◴ ☼	KCD-9452	DuPont
CFC-113	R-134a	☼	MP39	CJ Smith
	R-236fa	☼	HFG-3236fa	3M
CFC-114	R-124	◴ ☼	Suva 124	DuPont
	R-124	◴ ☼	Genetron 124	AlliedSignal
	R-236fa	☼	Suva 236fa	DuPont
	R-236fa	☼	HFG-3236fa	3M
CFC-12	R-409a	◴ ☼	Genetron 409a	AlliedSignal
	R-409a	◴ ☼	Forane 409A	Elf Atochem
	R-401B	◴ ☼	Suva MP66	DuPont
	R-401A	◴ ☼	Suva MP39	DuPont
	R-401A	◴ ☼	Genetron MP39	AlliedSignal
	R-401b	◴ ☼	Genetron MP66	AlliedSignal
	R-401C	◴ ☼	Suva MP52	DuPont
	R-406A	◴ ☼ ◉	Solkane 406A	Solvay
	R-406A	◴ ☼ ◉	R-406A	Monroe Air Tech
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	MP39	CJ Smith
	R-134a	☼	Suva 134a	DuPont
HCFC-141B	R-401B	◴ ☼	Suva MP66	DuPont
	R-236fa	☼	HFG-3236fa	3M
	R-245fa	☼	Genetron 245fa	AlliedSignal
HCFC-22	R-403A	◴ ☼ ⧗ ◉	Isceon 69S	Rhone Poulenc
	R-403A	◴ ☼ ⧗ ◉	69S	National
	R-402A	◴ ☼	Genetron HP80	AlliedSignal
	R-402A	◴ ☼ ◉	Suva HP80	DuPont
	R-402B	◴ ☼	Genetron HP81	AlliedSignal
	R-408a	◴ ☼	Forane 408A	Elf Atochem
	R-408a	◴ ☼	Genetron 408A	AlliedSignal
	R-507	☼	AZ-50	Solvay
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404A	☼	Genetron 404a	AlliedSignal
	R-404a	☼	Forane 404A	Elf Atochem
	R-404A	☼	Suva HP62	DuPont
	R-507	☼	AZ 50	Hoechst
	R-407b	☼	Klea 407B	ICI
	R-407a	☼	Klea 407A	ICI
	R-407c	☼	Genetron 407C	AlliedSignal
	in process	◉	HC-22a	HC- Tech, Inc.
R-500	R-409a	◴ ☼	Forane 409A	Elf Atochem
	R-409a	◴ ☼	Genetron 409a	AlliedSignal
	R-401A	◴ ☼	Genetron MP39	AlliedSignal

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Sector: **Refrigeration**

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-401B	◴ ☼	Suva MP66	DuPont
	R-401A	◴ ☼	Suva MP39	DuPont
R-500	R-401b	◴ ☼	Genetron MP66	AlliedSignal
	R-401C	◴ ☼	Suva MP52	DuPont
	R-406A	◴ ☼ ●	R-406A	Monroe Air Tech
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	MP39	CJ Smith
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Forane 134a	Elf Atochem
	in process	●	HC-22a	HC- Tech, Inc.
R-502	R-403A	◴ ☼ ⧗ ●	Isceon 69S	Rhone Poulenc
	R-403A	◴ ☼ ⧗ ●	69S	National
	R-402A	◴ ☼	Genetron HP80	AlliedSignal
	R-402A	◴ ☼ ●	Suva HP80	DuPont
	R-402B	◴ ☼	Genetron HP81	AlliedSignal
	R-408a	◴ ☼	Forane 408A	Elf Atochem
	R-507	☼	AZ-50	Solvay
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404a	☼	Forane 404A	Elf Atochem
	R-404A	☼	Genetron 404a	AlliedSignal
	R-404A	☼	Suva HP62	DuPont
	R-507	☼	AZ 50	Hoechst
	R-407b	☼	Klea 407B	ICI
	R-407a	☼	Klea 407A	ICI
	in process	●	HC-22a	HC- Tech, Inc.
dehumidifiers				
R-500	R-22	◴ ☼	Frigen 22	Hoechst
	R-401A	◴ ☼	Genetron MP39	AlliedSignal
	R-401A	◴ ☼	Suva MP39	DuPont
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Forane 134a	Elf Atochem
domestic refrigeration				
CFC-12	R-416a	◴ ☼ ●	Frigc FR-12	Clean-Air
	R-22	◴ ☼	Arcton 22	ICI
	R-22	◴ ☼	Isotron 22	Anco
	R-409a	◴ ☼	Genetron 409a	AlliedSignal
	R-409a	◴ ☼	Forane 409A	Elf Atochem
	R-401A	◴ ☼	Suva MP39	DuPont
	R-401A	◴ ☼	MP 39	CJ Smith
	R-401A	◴ ☼	Genetron MP39	AlliedSignal
	R-134a	☼	Formacel Z-4	DuPont

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Sector: **Refrigeration**

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Genetron 134a	AlliedSignal
CFC-12	R-134a	☼	Isceon 134a	Rhone Poulenc
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Reclin 134a	Hoechst
R-500	R-22	◴ ☼	Arcton 22	ICI
	R-409a	◴ ☼	Forane 409A	Elf Atochem
	R-409a	◴ ☼	Genetron 409a	AlliedSignal
	R-401A	◴ ☼	MP 39	CJ Smith
	R-401A	◴ ☼	Genetron MP39	AlliedSignal
	R-401A	◴ ☼	Suva MP39	DuPont
	R-134a	☼	Formacel Z-4	DuPont
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Reclin 134a	Hoechst
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Isceon 134a	Rhone Poulenc
	R-134a	☼	Klea 134A	ICI
freezing/chilling				
CFC-11	R-134a	☼	Super cold 134 Plus	MG
CFC-12	R-134a	☼	Super cold 134 Plus	MG
HCFC-22	R-134a	☼	Super cold 134 Plus	MG
heat pumps				
CFC-11	R-411c	◴ ☼ ◉	G2018c	Greencool
	R-123	◴	Forane 123	Elf Atochem
	R-123	◴	Refrigerant R123	Hoechst
	R-123	◴	Suva 123	DuPont
	R-123	◴	Arcton 123	ICI
	R-123	◴	Suva Centr-LP	DuPont
	R-123	◴	Suva Centr-LP	DuPont
	R-123	◴	Genetron 123	AlliedSignal
	R-123	◴	Solkane 123	Solvay
	R-124	◴ ☼	Forane 124	Elf Atochem
	R-124	◴ ☼	Genetron 124	AlliedSignal
	R-124	◴ ☼	Arcton 124	ICI
	R-124	◴ ☼	Suva 124	DuPont
	R-124	◴ ☼	Suva Chill MP	DuPont
	R-22	◴ ☼	Frigen 22	Hoechst
	R-22	◴ ☼	Forane 22	Elf Atochem
	R-22	◴ ☼	Genetron 22	AlliedSignal
	R-22	◴ ☼	Sercon 22	Technical
	R-22	◴ ☼	Freon 22	DuPont
	R-22	◴ ☼	Isotron 22	Anco

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Sector: **Refrigeration**

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-22	◴ ☼	Arcton 22	ICI
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Genetron 134a	AlliedSignal
CFC-11	R-134a	☼	Forane 134a	Elf Atochem
CFC-114	R-124	◴ ☼	Genetron 124	AlliedSignal
	R-22	◴ ☼	Freon 22	DuPont
	R-22	◴ ☼	Forane 22	Elf Atochem
	R-22	◴ ☼	Isotron 22	Anco
	R-22	◴ ☼	Frigen 22	Hoechst
	R-22	◴ ☼	Sercon 22	Technical
	R-22	◴ ☼	Arcton 22	ICI
	R-22	◴ ☼	Genetron 22	AlliedSignal
CFC-12	R-123	◴	Suva Centr-LP	DuPont
	R-416a	◴ ☼ ◉	Frigc FR-12	Clean-Air
	R-141b	◴ ☼	Forane 141b	Elf Atochem
	R-142b	◴ ☼	Forane 142b	Elf Atochem
	R-22	◴ ☼	Genetron 22	AlliedSignal
	R-22	◴ ☼	Arcton 22	ICI
	R-22	◴ ☼	Forane 22	Elf Atochem
	R-22	◴ ☼	Isotron 22	Anco
	R-22	◴ ☼	Freon 22	DuPont
	R-22	◴ ☼	Sercon 22	Technical
	R-22	◴ ☼	Frigen 22	Hoechst
	R-401A	◴ ☼	Suva MP39	DuPont
	R-401A	◴ ☼	Genetron MP39	AlliedSignal
	R-406a	◴ ☼ ◉	R-406A	Environment
	R-411a	◴ ☼ ◉	G2018a	Greencool
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	Klea 134A	ICI
HCFC-22	R-411c	◴ ☼ ◉	G2018c	Greencool
	R-141b	◴ ☼	Forane 141b	Elf Atochem
	R-411b	◴ ☼ ◉	G2018b	Greencool
	R-410A	☼	Suva 9100	DuPont
	R-410A	☼	Genetron AZ-20	AlliedSignal
	R-407c	☼	Klea 407C	ICI
R-500	R-411a	◴ ☼ ◉	G2018a	Greencool
R-502	R-411c	◴ ☼ ◉	G2018c	Greencool
	R-22	◴ ☼	Isotron 22	Anco
	R-22	◴ ☼	Sercon 22	Technical
	R-22	◴ ☼	Arcton 22	ICI
	R-22	◴ ☼	Genetron 22	AlliedSignal
	R-22	◴ ☼	Freon 22	DuPont

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-22	◴ ☼	Forane 22	Elf Atochem
	R-411b	◴ ☼ ◉	G2018b	Greencool
industrial refrigeration				
CFC-11	R-123	◴	Genetron 123	AlliedSignal
CFC-11	in process	◉	HC-12a	HC- Tech, Inc.
CFC-12	R-14	⧗	Frigen-14	Hoechst
	R-123	◴	Solkane 123	Solvay
	R-416a	◴ ☼ ◉	Frigc FR-12	Clean-Air
	R-22	◴ ☼	Arcton 22	ICI
	R-22	◴ ☼	Genetron 22	AlliedSignal
	R-22	◴ ☼	Freon 22	DuPont
	R-22	◴ ☼	Forane 22	Elf Atochem
	R-411a	◴ ☼ ◉	G2018a	Greencool
	R-411b	◴ ☼ ◉	G2018b	Greencool
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	Klea 134A	ICI
	in process	◉	HC-12a	HC- Tech, Inc.
		◉	Duracool 12a	Duracool limited
		⧗	PF 5050	3M
CFC-13	R-22	◴ ☼	Arcton 22	ICI
	R-23	☼	Reclin 23	Hoechst
	R-23	☼	Klea 23	ICI
	R-23	☼	Genetron 23	AlliedSignal
	R-508b	☼	Suva 95	DuPont
	R-508a	☼	Klea 508A	ICI
		◉		
HCFC-22	R-407c	☼	Suva 9000	Dupont
	R-134a	☼	Genetron 134a	AlliedSignal
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Forane 134a	Elf Atochem
	R-32	☼	Genetron 32	AlliedSignal
	R-410A	☼	Suva 9100	DuPont
	R-410A	☼	Genetron AZ-20	AlliedSignal
	R-407c	☼	Klea 407C	ICI
	R-407c	☼	Forane 407C	Elf Atochem
	R-407c	☼	Genetron 407C	AlliedSignal
	in process	◉	HC-22a	HC- Tech, Inc.
		◉	Duracool 22a	Duracool limited
R-502	R-407c	☼	Suva 9000	Dupont
	R-32	☼	Genetron 32	AlliedSignal
	R-410A	☼	Genetron AZ-20	AlliedSignal
	R-410A	☼	Suva 9100	DuPont
	R-407c	☼	Klea 407C	ICI
	R-407c	☼	Forane 407C	Elf Atochem

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-407c	☼	Genetron 407C	AlliedSignal
	in process	◉	HC-22a	HC- Tech, Inc.
low temperature refrigeration				
CFC-11	R-403A	◴☼⧗◉	69S	National
CFC-113	R-508a	☼	Klea 508A	ICI
	R-407a	☼	Klea 407A	ICI
CFC-12	R-403A	◴☼⧗◉	69S	National
HCFC-22	R-717	◉	Recip	Cimco
	R-717	◉	Recipak	York
	R-403A	◴☼⧗◉	69S	National
	R-403B	◴☼◉	Isceon 69L	Rhone Poulenc
	R-403A	◴☼⧗◉	Isceon 69S	Rhone Poulenc
	R-402A	◴☼	Genetron HP80	AlliedSignal
	R-402A	◴☼◉	Suva HP80	DuPont
	R-408a	◴☼	Forane 408A	Elf Atochem
	R-408a	◴☼	Genetron 408A	AlliedSignal
	R-509	◴☼	Arcton 509	ICI
	R-125	☼	Genetron 125	AlliedSignal
	R-125	☼	Klea 125	ICI
	R-125	☼	Suva 125	DuPont
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404A	☼	Suva HP62	DuPont
	R-404A	☼	Genetron 404a	AlliedSignal
	R-404a	☼	Forane 404A	Elf Atochem
	R-507	☼	AZ 50	Hoechst
	R-407b	☼	Klea 407B	ICI
	R-407a	☼	Klea 407A	ICI
	R-407c	☼	Klea 407C	ICI
	unassigned	☼	Reclin HX4	Hoechst
R-500	R-22	◴☼	Isotron 22	Anco
R-501	R-717	◉	Recipak	York
	R-717	◉	Recip	Cimco
	R-408a	◴☼	Forane 408A	Elf Atochem
	R-509	◴☼	Arcton 509	ICI
	R-125	☼	Klea 125	ICI
	R-125	☼	Suva 125	DuPont
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404A	☼	Genetron 404a	AlliedSignal
	R-404A	☼	Suva HP62	DuPont
	R-404a	☼	Forane 404A	Elf Atochem
	R-507	☼	AZ 50	Hoechst
	R-407a	☼	Klea 407A	ICI
	R-407b	☼	Klea 407B	ICI
R-502	R-717	◉	Recip	Cimco
	R-717	◉	Recipak	York

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-22	◴ ☼	Isotron 22	Anco
	R-403B	◴ ☼ ◉	Isceon 69L	Rhone Poulenc
	R-403A	◴ ☼ ⧗ ◉	Isceon 69S	Rhone Poulenc
	R-402A	◴ ☼ ◉	Suva HP80	DuPont
R-502	R-402A	◴ ☼	Genetron HP80	AlliedSignal
	R-408a	◴ ☼	Forane 408A	Elf Atochem
	R-408a	◴ ☼	Genetron 408A	AlliedSignal
	R-509	◴ ☼	Arcton 509	ICI
	R-125	☼	Klea 125	ICI
	R-125	☼	Suva 125	DuPont
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404A	☼	Genetron 404a	AlliedSignal
	R-404A	☼	Suva HP62	DuPont
	R-404a	☼	Forane 404A	Elf Atochem
	R-507	☼	AZ 50	Hoechst
	R-407b	☼	Klea 407B	ICI
	R-407a	☼	Klea 407A	ICI
	unassigned	☼	Reclin HX4	Hoechst
R-503	R-23	☼	GLC-23	Great Lakes
marine chillers				
CFC-114	R-124	◴ ☼	Suva 124	DuPont
	R-124	◴ ☼	Genetron 124	AlliedSignal
	R-411b	◴ ☼ ◉	G2018b	Greencool
	R-411a	◴ ☼ ◉	G2018a	Greencool
marine refrigeration				
CFC-114	R-236fa	☼	HFG-3236fa	3M
R-502	R-402A	◴ ☼	Genetron HP80	AlliedSignal
	R-402A	◴ ☼ ◉	Suva HP80	DuPont
	R-408a	◴ ☼	Genetron 408A	AlliedSignal
	R-125	☼	Suva 125	DuPont
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404a	☼	Forane 404A	Elf Atochem
	R-404A	☼	Genetron 404a	AlliedSignal
	R-404A	☼	Suva HP62	DuPont
transport refrigeration				
CFC-12	R-22	◴ ☼	Arcton 22	ICI
	R-22	◴ ☼	Forane 22	Elf Atochem
	R-22	◴ ☼	Freon 22	DuPont
	R-22	◴ ☼	Genetron 22	AlliedSignal
	R-409a	◴ ☼	Forane 409A	Elf Atochem
	R-409a	◴ ☼	Genetron 409a	AlliedSignal
	R-401A	◴ ☼	Genetron MP39	AlliedSignal
	R-401A	◴ ☼	Suva MP39	DuPont
	R-401b	◴ ☼	Genetron MP66	AlliedSignal

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	R-401B	◴☼	Suva MP66	DuPont
	R-408a	◴☼	Genetron 408A	AlliedSignal
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404A	☼	Suva HP62	DuPont
	R-404A	☼	Genetron 404a	AlliedSignal
CFC-12	R-134a	☼	Reclin 134a	Hoechst
	R-134a	☼	Klea 134A	ICI
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	MP39	CJ Smith
	R-134a	☼	Forane 134a	Elf Atochem
	R-134a	☼	Isceon 134a	Rhone Poulenc
	R-407c	☼	Klea 407C	ICI
	R-407a	☼	Klea 407A	ICI
	R-407b	☼	Klea 407B	ICI
HCFC-22	R-402B	◴☼	Genetron HP81	AlliedSignal
	R-402B	◴☼◉	Suva HP81	DuPont
	R-402A	◴☼	Genetron HP80	AlliedSignal
	R-402A	◴☼◉	Suva HP80	DuPont
	R-408a	◴☼	Genetron 408A	AlliedSignal
	R-408a	◴☼	Forane 408A	Elf Atochem
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404a	☼	Reclin 404A	Hoechst
	R-404a	☼	Forane 404A	Elf Atochem
	R-404A	☼	Genetron 404a	AlliedSignal
	R-404A	☼	Suva HP62	DuPont
	R-507	☼	AZ 50	Hoechst
	R-407a	☼	Klea 407A	ICI
	R-407c	☼	Klea 407C	ICI
	R-407b	☼	Klea 407B	ICI
R-500	R-22	◴☼	Freon 22	DuPont
	R-22	◴☼	Arcton 22	ICI
	R-22	◴☼	Forane 22	Elf Atochem
	R-22	◴☼	Genetron 22	AlliedSignal
	R-409a	◴☼	Forane 409A	Elf Atochem
	R-409a	◴☼	Genetron 409a	AlliedSignal
	R-401b	◴☼	Genetron MP66	AlliedSignal
	R-401A	◴☼	Genetron MP39	AlliedSignal
	R-401B	◴☼	Suva MP66	DuPont
	R-401A	◴☼	Suva MP39	DuPont
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404a	☼	Forane 404A	Elf Atochem
	R-404A	☼	Suva HP62	DuPont
	R-404A	☼	Genetron 404a	AlliedSignal
	R-134a	☼	Reclin 134a	Hoechst
	R-134a	☼	Isceon 134a	Rhone Poulenc

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ODS	Ashrae	Notes	Trade Name	Supplier
	R-134a	☼	Forane 134a	Elf Atochem
R-502	R-22	◴☼	Forane 22	Elf Atochem
	R-22	◴☼	Isotron 22	Anco
	R-22	◴☼	Arcton 22	ICI
	R-22	◴☼	Freon 22	DuPont
R-502	R-22	◴☼	Genetron 22	AlliedSignal
	R-402B	◴☼	Genetron HP81	AlliedSignal
	R-402A	◴☼◎	Suva HP80	DuPont
	R-402A	◴☼	Genetron HP80	AlliedSignal
	R-402B	◴☼◎	Suva HP81	DuPont
	R-408a	◴☼	Forane 408A	Elf Atochem
	R-408a	◴☼	Genetron 408A	AlliedSignal
	R-507	☼	Genetron AZ-50	AlliedSignal
	R-404a	☼	Reclin 404A	Hoechst
	R-404A	☼	Suva HP62	DuPont
	R-404a	☼	Forane 404A	Elf Atochem
	R-404A	☼	Genetron 404a	AlliedSignal
	R-507	☼	AZ 50	Hoechst
	R-134a	☼	Suva 134a	DuPont
	R-134a	☼	MP39	CJ Smith
	R-407b	☼	Klea 407B	ICI
	R-407c	☼	Klea 407C	ICI
	R-407a	☼	Klea 407A	ICI
ultra low temperature refrigeration				
CFC-13	R-23	☼	Genetron 23	AlliedSignal
	R-23	☼	Klea 23	ICI
	R-23	☼	Suva 23	DuPont
	R-23	☼	Reclin 23	Hoechst
	R-508a	☼	Klea 508A	ICI
	R-410A	☼	Suva 9100	DuPont
R-503	R-508b	☼	Suva 95	DuPont
	R-508a	☼	Klea 508A	ICI

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ODS	Alternative	Notes	Trade Name	Supplier
Sector:	***Solvents***			
aqueous degreasing and parts cleaning				
MCF	aqueous cleaners: sprays, ultrasonics, immersion and hand wipe		Daraclean	Grace
cleaning close spaced electronic assemblies at low temperature				
CFC-113	ethyl lactate	●	Envi-Ro-Tech 1673	Tech Spray
	m-pyrrol blend	●	M-Pyrol	ISP
	m-pyrrol blend	●	Micropure CDF	ISP
MCF	m-pyrrol blend	●	Micropure CDF	ISP
	m-pyrrol blend	●	M-Pyrol	ISP
	terpenes	●	RE-ENTRY ES	Enviro. Solvents
	terpenes	●	RE-ENTRY KNI	Enviro. Solvents
cleaning cross hairs in surveying equipment				
MCF	filtered, contaminant-free pressurized gas or air			
cleaning disk drives & gyroscopes				
MCF	aliphatic hydrocarbons: mineral spirits, n-paraffin and kerosene	●		
	aqueous cleaning & hydrocarbon/surfactant blends	●		
	aqueous cleaning using sprays, ultrasonic, hot-air and vacuum oven drying processes			
	aqueous cleaning with or without saponifier	●	Primaclean	Dow
	HFE-7100	☼●	HFE 7100	3M
	ice-particle cleaning			
	plasma cleaning-electrically charged gases: O2, Ar, He, SiF4			
cleaning electronic & electromechanical instruments				
CFC-113	HFE-7100	☼●	HFE 7100	3M
	HFE-71DA	☼●	HFE 71DA	3M
	HFE-71DE	☼●	HFE 71DE	3M
	HFE-7200	☼●	HFE 7200	3M
cleaning electronics & electromechanical instruments				
CFC-11	alcohols	●	Safety Wash	MG
	d-limonene blend (60%)	●	LPS PreSlove Cleaner/Degreaser	LPS
	methylene chloride	●	M-Clene-D	APCO
	perchloroethylene	●	Perclene	APCO

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Sector:	Solvents			
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
	terpenes		RE-ENTRY FGL	Enviro. Solvents
CFC-113	alcohol blend		LPS CFC Free Electro Contact Cleaner	LPS
CFC-113	alcohols		Nu-trol Contact Cleaner with Lubrication	MG
	aliphatic esters		Bioact Defluxers	Petroferm
	aliphatic esters		AVD Solvating Agent	Petroferm
	d-limonene blend (60%)		LPS PreSlove Cleaner/Degreaser	LPS
	FC-218		PF 5030	3M
	HCFC-123		Suva 123	DuPont
	HCFC-123		Arcton 123	ICI
	HFC-4310		Vertrel	DuPont
	High flash, terpene alcohol blend		TARKSOL SC 959	Terpene Tech.
	isohexane & isopropyl alcohol LPS			CFC-Free
	PF-5052		PF 5052	3M
	PF-5060		PF 5060	3M
	silicones/alcohols		Contact Cleaner with Silicones	MG
	terpenes		RE-ENTRY ME	Enviro. Solvents
	terpenes		RE-ENTRY RFS	Enviro. Solvents
	terpenes		RE-ENTRY ES	Enviro. Solvents
	terpenes		RE-ENTRY KNI	Enviro. Solvents
	terpenes		RE-ENTRY VPS	Enviro. Solvents
	terpenes		RE-ENTRY FGL	Enviro. Solvents
CFC-114	aliphatic hydrocarbons		TPC Solvent	Drew Chemical
CFC-12	alcohols		Magnetic Head/Disc Cleaner	MG
	terpenes		RE-ENTRY FGL	Enviro. Solvents
MCF	alcohol blend		LPS CFC Free Electro Contact Cleaner	LPS
	aliphatic esters		AVD Solvating Agent	Petroferm
	chloriated blend		Oxsol 100	Oxychem
	FC-218		PF 5030	3M
	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
	kerosene		APCO Stove Oil	APCO
	methylene chloride		Methoklone GR	ICI
	mineral spirits		No. 10 Mineral Spirits	APCO
	perchloroethylene		Perluxe D	ICI
	PF-5052		PF 5052	3M
	PF-5060		PF 5060	3M
	terpenes		RE-ENTRY ME	Enviro. Solvents
	terpenes		RE-ENTRY KNI	Enviro. Solvents
	terpenes		RE-ENTRY ES	Enviro. Solvents
	terpenes		RE-ENTRY RFS	Enviro. Solvents
	terpenes		RE-ENTRY VPS	Enviro. Solvents

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Sector:		Solvents		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
	trichloroethylene		Royalene "DX"	Hanson
	trichloroethylene		Triclene	APCO
cleaning electronics and electromechanical instruments				
CFC-11	hydrocarbons		Partsprep	ISP
	m-pyrrol blend		Micropure CDF	ISP
	m-pyrrol blend		M-Pyrol	ISP
MCF	aliphatic blends		Newsol 40 BG	Cartier
	CO2 pellets		CO2 Cleanblast	Wickens
	hydrocarbons		Partsprep	ISP
	m-pyrrol blend		Micropure CDF	ISP
	m-pyrrol blend		M-Pyrol	ISP
cleaning hydraulic control systems, optical components,electrical contacts, plastic assemblies and special lubricants				
CFC-11	terpenes		RE-ENTRY ES	Enviro. Solvents
	terpenes		RE-ENTRY FGL	Enviro. Solvents
CFC-114	terpenes		RE-ENTRY FGL	Enviro. Solvents
CFC-12	terpenes		RE-ENTRY RFS	Enviro. Solvents
MCF	HFE-7100		HFE 7100	3M
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 9790
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 4000
	High flash, terpene alcohol blend		TARKSOL SC 959	Terpene Tech.
	hydrocarbons		Partsprep	ISP
	m-pyrrol blend		M-Pyrol	ISP
	petroleum distillate		APCO 467 Solvent	APCO
	terpenes		RE-ENTRY VPS	Enviro. Solvents
	terpenes		RE-ENTRY FGL	Enviro. Solvents
	terpenes		RE-ENTRY ME	Enviro. Solvents
	terpenes		RE-ENTRY ES	Enviro. Solvents
	terpenes		RE-ENTRY KNI	Enviro. Solvents
	terpenes		RE-ENTRY RFS	Enviro. Solvents
cleaning metals which react with high alkalinity solutions				
MCF	4-isopropenyl-1-methyl cyclohexane			
	acidic cleaners			
	alkyl acetate ester			
	dipropylene glycol/monomethyl ether			
	ethyl ester			
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 4000
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 9790
	petroleum distillate		APCO 467 Solvent	APCO

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Sector:		Solvents		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
	potassium hydroxide primed alcohol			
	terpenes		RE-ENTRY ES	Enviro. Solvents
	terpenes		RE-ENTRY KNI	Enviro. Solvents
cold immersion and manual cleaning to remove heavy grease and other industrial				
MCF	aromatic hydrocarbons: naptha, toluene, xylene		Apsol #1/#2	APCO
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 4031
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 9790
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 2031
	hydrocarbons		Partsprep	ISP
	m-pyrrol blend		M-Pyrol	ISP
	oxygenated solvents: ketone, ester, alcohols			APCO
	petroleum distillates		Magnusol 728	Magnus
	terpenes		RE-ENTRY KNI	Enviro. Solvents
cutting fluids				
CTC			LPS Tap-All Tapping Fluid	LPS
	oil based		Steel-Kut	APCO
MCF	fatty esters		Dualaction Natural	LPS
2031,RTU	high flash, aqueous emulsion Terpene Tech.			Tarksol SC
	oil based		Steel-Kut	APCO
	oil based		Steel-Kut	APCO
	water/phosphate ester		Dualaction Aquacut	LPS
	water/phosphate ester		Dualaction Aquacut	LPS
dry cleaning				
MCF	hydrocarbons			
	perchloroethylene		Dowper	Dow
	perchloroethylene		Perclene	APCO
	perchloroethylene		Perluxe D	ICI
	perchloroethylene		Perklone MD	ICI
	solvent blend		Fabrisol LCBG	Cartier
	wet cleaning			
general cleaning				
CFC-11	hydrocarbons		Partsprep	ISP
	m-pyrrol blend		Printsolve	ISP
	m-pyrrol blend		M-Pyrol	ISP
	m-pyrrol blend		Shipshape	ISP
CFC-113	aliphatic hydro carbons		Actrel 1160L	APCO
	aliphatic hydro carbons		Actrel 3338L	APCO
	aliphatic hydrocarbons		Axarel 9000	Petroferm

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Sector: **Solvents**

ODS	Alternative	Notes	Trade Name	Supplier
	aliphatic hydrocarbons		Axarel 6000	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 56	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 32	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 38	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 52	Petroferm
CFC-113	aliphatic hydrocarbons/alcohol		Axarel 2200	Petroferm
	aqueous-cold		Detersol	Magnus
	aqueous-heated		645-DX	Magnus
	aqueous-heated		663-X	Magnus
	HFE-7100		HFE 7100	3M
	HFE-71DE		HFE 71DE	3M
	high flash, aqueous emulsion Terpene Tech.			Tarksol NV
	high flash, aqueous emulsion Terpene Tech.			Tarksol Oilsolv
151	high flash, aqueous emulsion Terpene Tech.			Tarksol Oilsolv
151 Citric	high flash, aqueous emulsion Terpene Tech.			Tarksol SC
2031,RTU	high flash, semi-aqueous hydrocarbon		Tarksol SC 9074	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 6000	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9000	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9021	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9025	Terpene Tech.
	High flash, terpene alcohol blend		TARKSOL SC 959	Terpene Tech.
	methylene chloride		Methylene Chloride	Dow
	N,N-dimethylformamine		DMF	Chinook
	perchloroethylene		Perc	Dow
	semi-aqueous hydrocarbons		KCD-9506	DuPont
	semi-aqueous hydrocarbons		KCD-9505	DuPont
	terpenes		RE-ENTRY ME	Enviro. Solvents
	trichloroethylene		Neu-Tri	Dow
	trichloroethylene		Triclene	APCO
	trichloroethylene		Royalene "DX"	Hanson
CFC-12	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
	terpenes		RE-ENTRY RFS	Enviro. Solvents

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Sector:		Solvents		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
CTC	aliphatic hydrocarbons		Axarel 9000	Petroferm
	aliphatic hydrocarbons		Axarel 6000	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 52	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 2200	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 32	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 38	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 56	Petroferm
	glycolethers-cold		149X	Magnus
CTC	glycolethers-cold		1300	Magnus
	gycolethers-cold		127	Magnus
	N,N-dimethylformamine		DMF	Chinook
	semi aqueous		Soliterg 316	Magnus
	semi aqueous		Soliterg 304	Magnus
	semi-aqueous hydrocarbons		KCD-9505	DuPont
	semi-aqueous hydrocarbons		KCD-9506	DuPont
	terpenes		RE-ENTRY FGL	Enviro. Solvents
	terpenes		RE-ENTRY KNI	Enviro. Solvents
	terpenes		RE-ENTRY RFS	Enviro. Solvents
	terpenes		RE-ENTRY VPS	Enviro. Solvents
	terpenes-cold		Citrox	Magnus
	trichloroethylene		Royalene "DX"	Hanson
MCF	aliphatic hydro carbons		Actrel 1160L	APCO
	aliphatic hydro carbons		Actrel 3338L	APCO
	aliphatic hydrocarbons		Axarel 6000	Petroferm
	aliphatic hydrocarbons		Axarel 9000	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 38	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 2200	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 56	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 32	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 52	Petroferm
	aqueous cleaners: sprays, ultrasonics, immersion and hand wipe		Daraclean	Grace
	aqueous cleaning with or without saponifier		Primaclean	Dow
	aqueous-cold		Detersol	Magnus
	aqueous-heated		663-X	Magnus

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Sector: **Solvents**

ODS	Alternative	Notes	Trade Name	Supplier
	aqueous-heated		645-DX	Magnus
	glycolethers-cold		1300	Magnus
	glycolethers-cold		149X	Magnus
	gycolethers-cold		127	Magnus
	HFE-7100		HFE 7100	3M
	HFE-71DE		HFE 71DE	3M
2031,RTU	high flash, aqueous emulsion Terpene Tech.			Tarksol SC
	high flash, aqueous emulsion Terpene Tech.			Tarksol NV
151 Citric	high flash, aqueous emulsion Terpene Tech.			Tarksol Oilsolv
151	high flash, aqueous emulsion Terpene Tech.			Tarksol Oilsolv
	high flash, semi-aqueous hydrocarbon		Tarksol SC 9074	Terpene Tech.
MCF	high flash, terpene alcohol blend		Tarksol SC 9021	Terpene Tech.
	High flash, terpene alcohol blend		TARKSOL SC 959	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9025	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9000	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 6000	Terpene Tech.
	hydrocarbons		Partsprep	ISP
	m-pyrrol blend		Shipshape	ISP
	m-pyrrol blend		Printsolve	ISP
	m-pyrrol blend		M-Pyrol	ISP
	methylene chloride		Methylene Chloride	Dow
	perchloroethylene		Perc	Dow
	semi aqueous		Soliterg 304	Magnus
	semi aqueous		Soliterg 316	Magnus
	semi-aqueous hydrocarbons		KCD-9506	DuPont
	semi-aqueous hydrocarbons		KCD-9505	DuPont
	terpenes		Vanchem 2400	Vanchem
	terpenes		Vanchem 2200	Vanchem
	terpenes		RE-ENTRY ME	Enviro. Solvents
	terpenes-cold		Citrox	Magnus
	trichloroethylene		Royalene "DX"	Hanson
	trichloroethylene		Neu-Tri	Dow
heavy duty cleaners				
CFC-11	esters		Teksol	Magnus
CFC-12	esters		Teksol	Magnus
MCF	aqueous cleaners: sprays, ultrasonics, immersion and hand wipe		Daraclean	Grace

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ODS	Alternative	Notes	Trade Name	Supplier
	esters		Teksol	Magnus
	heptane/acetone		Zero-Tri	LPS
	high flash, aqueous emulsion Terpene Tech.		Tarksol SC 4031	
	high flash, aqueous emulsion Terpene Tech.		Tarksol SC 2031	
	high flash, terpene alcohol blend		Tarksol SC 6000	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9021	Terpene Tech.
	methylene chloride-cold		781	Magnus
	n-methyl pyrolidine		Kemstrip 596	Magnus
	perchloroethylene		Perklone MD	ICI
	perchloroethylene		Perclene	APCO
	terpenes		RE-ENTRY KNI	Enviro. Solvents
	trichloroethylene		Triklone	ICI
MCF	trichloroethylene		Royalene "DX"	Hanson
liquid phase cleaning of grease, oil and particles from metals, plastic and glass, precision parts, electronics				
CFC-11	aqueous cleaning with or without saponifier		Primaclean	Dow
	trichloroethylene		Triklone	ICI
	trichloroethylene		Royalene "DX"	Hanson
CFC-113	vegitable distillant & hydrocarbons blend		Teksol EP	Kuusport
	vegitable distillant & hydrocarbons blend		SKYSOL	Kuusport
	vegitable distillant & hydrocarbons blend		CITRA-SAFE	Kuusport
CFC-12	trichloroethylene		Royalene "DX"	Hanson
	trichloroethylene		Triklone	ICI
MCF			Newsol 55BG	Cartier
	alcohols/ketones		Ipasol Film Remover	Magnus
	aqueous cleaning with or without saponifier		Primaclean	Dow
	chloriated & aliphatic solvent blend		VITSOL 95	Cartier
	HFE-7100		HFE 7100	3M
	high flash, aqueous emulsion Terpene Tech.		Tarksol SC 9790	
	high flash, aqueous emulsion Terpene Tech.		Tarksol SC 2031,	
RTU	high flash, aqueous emulsion Terpene Tech.		Tarksol PWC	
	high flash, semi-aqueous hydrocarbon		Tarksol SC 9074	Terpene Tech.
	hydrocarbons		Partsprep	ISP
	hydrocarbons:		ACTREL Cleaners	APCO

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Sector:		Solvents		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
	propane, butane, isopentane			
	low foam		VIT 1327 Typhoon Cleaner	Cartier
	m-pyrrol blend		M-Pyrol	ISP
	m-pyrrol blend		Shipshape	ISP
	perchloroethylene		Perklone MD	ICI
	trichloroethylene		Triclene	APCO
	trichloroethylene		Royalene "DX"	Hanson
	trichloroethylene		Triklone	ICI
	vegitable distillant & hydrocarbons blend		SKYSOL	Kuusport
	vegitable distillant & hydrocarbons blend		Teksol EP	Kuusport
	vegitable distillant & hydrocarbons blend		CITRA-SAFE	Kuusport
lubricant bearer				
MCF	mechanical methods		Target Moly Lubricant Dry Film	Releasall-Targe
	mechanical methods		Target Moly Lubricant - Paste	Releasall-Targe
	mechanical methods		Target TFE Lubracant Dry Film	Releasall-Targe
	mechanical methods		Target Premium Silicone Lubricant	Releasall-Targe
medical applications and high accuracy gyroscopes				
MCF	perfluorocarbons			
metal cleaning				
CFC-11	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
CFC-113 Terpene Tech.	high flash, aqueous emulsion			Tarksol SC 9790
	ultrasonic cleaning		Miraclean	Chautauqua
CTC	aliphatic hydro carbons		Actrel 1160L	APCO
	aliphatic hydro carbons		Actrel 3338L	APCO
	aliphatic hydrocarbons		Axarel 9000	Petroferm
	aliphatic hydrocarbons		Axarel 6000	Petroferm
	aqueous cleaning with or without saponifier		Primaclean	Dow
	chlorinated blend		Oxsol Solvents	APCO
RTU	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 2031,
	high flash, semi-aqueous hydrocarbon		Tarksol SC 9074	Terpene Tech.
	hydrocarbons		Partsprep	ISP
	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
	m-pyrrol blend		M-Pyrol	ISP
	perchloroethylene		Perclene	APCO
	perchloroethylene		Perluxe D	ICI
	perchloroethylene		Perklone MD	ICI
	PF-5052		PF 5052	3M
	PF-5060		PF 5060	3M

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Sector:		Solvents		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
	terpenes		Vanchem 2400	Vanchem
	terpenes		RE-ENTRY ES	Enviro. Solvents
	terpenes		Vanchem 2200	Vanchem
	terpenes		RE-ENTRY KNI	Enviro. Solvents
	trichloroethylene		Triclene	APCO
	trichloroethylene		Royalene "DX"	Hanson
MCF	terpenes		RE-ENTRY ME	Enviro. Solvents
metal degreasing & precision cleaning				
CFC-11	alcohol blend		LPS CFC Free Electro Contact Cleaner	LPS
	aliphatic esters		AVD Solvating Agent	Petroferm
	glycolethers-cold		149X	Magnus
	hydrocarbons		Partsprep	ISP
	m-pyrrol blend		M-Pyrol	ISP
	petroleum distillates/glycol ether		Parts Immersion Cleaner	Drew Chemical
	terpenes		RE-ENTRY VPS	Enviro. Solvents
CFC-113	aliphatic esters		AVD Solvating Agent	Petroferm
	aliphatic hydrocarbons		Axarel 9000	Petroferm
CFC-113	aliphatic hydrocarbons		Axarel 6000	Petroferm
	chloriated blend		Oxsol 100	Oxychem
	chlorinated blend		Oxsol 73	APCO
	FC-6-1-16 n-octane		PF 5070	3M
	glycolethers		HDL 330	Magnus
	glycolethers-cold		149X	Magnus
	gycolethers-cold		127	Magnus
	HFE-7100		HFE 7100	3M
	HFE-71DE		HFE 71DE	3M
	high flash, aqueous emulsion Terpene Tech.			Tarksol PWC
RTU	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 2031,
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 9790
	high flash, semi-aqueous hydrocarbon		Tarksol SC 9074	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9025	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 6000	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9021	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9000	Terpene Tech.
	methylene chloride		Methylene Chloride	Dow
	perchloroethylene		Perc	Dow

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Sector: **Solvents**

ODS	Alternative	Notes	Trade Name	Supplier
	perchloroethylene		Perclene	APCO
	perchloroethylene		Perluxe D	ICI
	petroleum distillates		Oxsol 325	Oxychem
	petroleum distillates		Oxsol 253	Oxychem
	petroleum distillates-cold		Oxsol 730	Oxychem
	petroleum distillates-cold		Oxsol 550	Oxychem
	petroleum distillates-heated		Oxsol 1000	Oxychem
	terpenes		Vanchem 2400	Vanchem
	terpenes		RE-ENTRY ME	Enviro. Solvents
	terpenes		Vanchem 2200	Vanchem
	terpenes		RE-ENTRY ES	Enviro. Solvents
	trichloroethylene		Neu-Tri	Dow
	trichloroethylene		Triclene	APCO
	trichloroethylene		Royalene "DX"	Hanson
CFC-12	terpenes		RE-ENTRY RFS	Enviro. Solvents
CTC	alcohol blend		LPS CFC Free Electro Contact Cleaner	LPS
	chloriated blend		Oxsol 100	Oxychem
	chlorinated blend		Oxsol Solvents	APCO
	FC-218		Isceon 218	Rhone Poulenc
	glycolethers		HDL 330	Magnus
CTC	glycolethers-cold		149X	Magnus
	gycolethers-cold		127	Magnus
	HCFC-141b mineral oils, alcohols, antistatics		Autocure Electro Contact Cleaner	Releasall-Targe
	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
	perchloroethylene		Perklone MD	ICI
	petroleum distillates		Oxsol 253	Oxychem
	petroleum distillates		Oxsol 325	Oxychem
	petroleum distillates-cold		Oxsol 730	Oxychem
	petroleum distillates-cold		Oxsol 550	Oxychem
	petroleum distillates-heated		Oxsol 1000	Oxychem
	terpenes		RE-ENTRY KNI	Enviro. Solvents
HCFC-141B	alcohol blend		LPS CFC Free Electro Contact Cleaner	LPS
	aliphatic hydrocarbons/alcohol		Axarel 52	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 38	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 2200	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 32	Petroferm
	aliphatic hydrocarbons/alcohol		Axarel 56	Petroferm

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Sector:	Solvents			
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
	aliphatic hydrocarbons/alkyl acetate		Super 140	LPS
	chlorinated blend		Oxsol 73	APCO
	glycolethers		HDL 330	Magnus
	glycolethers-cold		149X	Magnus
	gycolethers-cold		127	Magnus
	heptane/acetone		Zero-Tri	LPS
RTU	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 2031,
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 9790
	high flash, semi-aqueous hydrocarbon		Tarksol SC 9074	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9000	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9025	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 9021	Terpene Tech.
	high flash, terpene alcohol blend		Tarksol SC 6000	Terpene Tech.
	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
	perchloroethylene		Perluxe D	ICI
	perchloroethylene		Perclene	APCO
	terpenes		RE-ENTRY ME	Enviro. Solvents
HCFC-141B	terpenes		RE-ENTRY ES	Enviro. Solvents
	terpenes		Vanchem 2200	Vanchem
	terpenes		Vanchem 2400	Vanchem
	trichloroethylene		Triklone	ICI
	trichloroethylene		Triclene	APCO
	trichloroethylene		Royalene "DX"	Hanson
MCF	aliphatic esters		AVD Solvating Agent	Petroferm
	chloriated blend		Oxsol 100	Oxychem
	FC-218		Freon 218	DuPont
	FC-6-1-16 n-octane		PF 5070	3M
	high flash, aqueous emulsion Terpene Tech.			Tarksol PWC
	hydrocarbons		Partsprep	ISP
	m-pyrrol blend		M-Pyrol	ISP
	methylene chloride		Methylene Chloride	Dow
	perchloroethylene		Perc	Dow
	petroleum distillates		Degreaser AP	Drew Chemical
	petroleum distillates		Oxsol 325	Oxychem
	petroleum distillates		Oxsol 253	Oxychem
	petroleum distillates-cold		Oxsol 550	Oxychem

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Sector: Solvents

ODS	Alternative	Notes	Trade Name	Supplier
	petroleum distillates-cold		Oxsol 730	Oxychem
	petroleum distillates-heated		Oxsol 1000	Oxychem
	petroleum distillates/glycol ether		Parts Immersion Cleaner	Drew Chemical
	trichloroethylene		Neu-Tri	Dow
no clean option for electronics				
CFC-113			Solderel VLR	DuPont
	rosin-free no-clean paste		Solderel VLR 0620	DuPont
	rosin-free no-clean paste		Solderel VLR 0621	DuPont
CTC			Solderel VLR	DuPont
	rosin-free no-clean paste		Solderel VLR 0621	DuPont
	rosin-free no-clean paste		Solderel VLR 0620	DuPont
MCF			Solderel VLR	DuPont
	controlled atmosphere (soldering in an inert or reactive gas) -dry N2			
	high solids fluxes (requires no post-soldering cleaning)			
	rosin-free no-clean paste		Solderel VLR 0620	DuPont
	rosin-free no-clean paste		Solderel VLR 0621	DuPont
no-clean option for metal degreasing				
MCF	water-soluble, emulsifiable machining and metal forming lubricants			
precision component cleaning				
CFC-11	aliphatic hydrocarbons		Axarel 6000	Petroferm
CFC-113	aliphatic hydrocarbons		Axarel 9000	Petroferm
	aqueous		Super Bio-Wash	Chemtronics
	blend		Bioact 113	Petroferm
	blend		Bioact 184	Petroferm
	chloriated blend		Oxsol 100	Oxychem
	chlorinated blend		Oxsol 73	APCO
	esters		Bioact 280	Petroferm
	esters		Bioact 285	Petroferm
	HFE-7100		HFE 7100	3M
	HFE-71DE		HFE 71DE	3M
	high flash, aqueous emulsion Terpene Tech.			Tarksol SC 9790
	hydrocarbons		Bioact VSO	Petroferm
	m-pyrrol blend		M-Pyrol	ISP
	m-pyrrol blend		Micropure CDF	ISP
	methylene chloride		M-Clene-D	APCO
	perchloroethylene		Perclene	APCO
	terpenes		Bioact PCG	Petroferm
	terpenes		Bioact 120	Petroferm
	trichloroethylene		Triclene	APCO
	ultrasonic cleaning		Miraclean	Chautauqua

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Sector:		Solvents		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
CFC-114	aliphatic hydrocarbons		Axarel 6000	Petroferm
CFC-12	aliphatic hydrocarbons		Axarel 6000	Petroferm
HCFC-141B	blend		Bioact 184	Petroferm
	chloriated blend		Oxsol 100	Oxychem
	chlorinated blend		Oxsol 73	APCO
	perchloroethylene		Perclene	APCO
	trichloroethylene		Triclene	APCO
MCF	aliphatic hydrocarbons		Axarel 9000	Petroferm
	aliphatic hydrocarbons		Axarel 6000	Petroferm
	aqueous		Super Bio-Wash	Chemtronics
	aqueous cleaners: sprays, ultrasonics, immersion and hand wipe		Daraclean	Grace
	blend		Bioact 113	Petroferm
	esters		Bioact 280	Petroferm
	esters		Bioact 285	Petroferm
	HFE-7100		HFE 7100	3M
	HFE-71DE		HFE 71DE	3M
	high flash, aqueous emulsion			Tarksol SC
2031,RTU	Terpene Tech.			
	high flash, semi-aqueous hydrocarbon		Tarksol SC 9074	Terpene Tech.
	High flash, terpene alcohol blend		TARKSOL SC 959	Terpene Tech.
MCF	hydrocarbons		Bioact VSO	Petroferm
	m-pyrrol blend		Micropure CDF	ISP
	m-pyrrol blend		M-Pyrol	ISP
	methylene chloride		Methoklone GR	ICI
	terpenes		Vanchem 2200	Vanchem
	terpenes		Bioact 120	Petroferm
	terpenes		RE-ENTRY KNI	Enviro. Solvents
	terpenes		Vanchem 2400	Vanchem
	terpenes		Vanchem 2200	Vanchem
	terpenes		Bioact PCG	Petroferm
removing organic films from glass, quartz, sapphire, ceramics, metals, silicon,				
CFC-11	terpenes		RE-ENTRY RFS	Enviro. Solvents
CFC-12	terpenes		RE-ENTRY FGL	Enviro. Solvents
MCF	aqueous cleaners: sprays, ultrasonics, immersion and hand wipe		Daraclean	Grace
	d-limonene blend (60%)		LPS PreSlove Cleaner/Degreaser	LPS
	high flash, semi-aqueous hydrocarbon		Tarksol SC 9074	Terpene Tech.
	hydrocarbons		Partsprep	ISP
	hydrocarbons: propane, butane, isopentane		ACTREL Cleaners	APCO
	m-pyrrol blend		M-Pyrol	ISP

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Sector: Solvents

ODS	Alternative	Notes	Trade Name	Supplier
	m-pyrrol blend	●	Shipshape	ISP
	terpenes	●	RE-ENTRY VPS	Enviro. Solvents
	terpenes	●	RE-ENTRY FGL	Enviro. Solvents
	terpenes	●	RE-ENTRY ME	Enviro. Solvents
	terpenes	●	RE-ENTRY ES	Enviro. Solvents
	terpenes	●	RE-ENTRY RFS	Enviro. Solvents
	terpenes	●	RE-ENTRY ME	Enviro. Solvents
	terpenes	●	RE-ENTRY KNI	Enviro. Solvents
	trichloroethylene	●	Royalene "DX"	Hanson
	trichloroethylene	●	Triclene	APCO
surface cleaners & general cleaning				
CFC-12	hydrocarbons: propane, butane, isopentane	●	ACTREL Cleaners	APCO
	perchloroethylene	●	Perclene	APCO
	terpenes	●	RE-ENTRY VPS	Enviro. Solvents
MCF			LPS Precision Clean Multi-Purpose Cleaner/degreaser	LPS
	aqueous cleaners: sprays, ultrasonics, immersion and hand wipe		Daraclean	Grace
	aqueous cleaning with or without saponifier	●	Primaclean	Dow
	chlorinated blend		Oxsol Solvents	APCO
MCF	developing company specific		Advanced cleaning system	Dow
	hydrocarbons: propane, butane, isopentane	●	ACTREL Cleaners	APCO
	m-pyrrol blend	●	M-Pyrol	ISP
	N,N-dimethylformamine	●	DMF	Chinook
	N,N-dimethylformamine	●	DMF	Chinook
	perchloroethylene	●	Perklone MD	ICI
	perchloroethylene	●	Perclene	APCO
	terpenes	●	RE-ENTRY ME	Enviro. Solvents
	terpenes	●	RE-ENTRY FGL	Enviro. Solvents
	terpenes	●	RE-ENTRY ES	Enviro. Solvents
	terpenes	●	RE-ENTRY FGL	Enviro. Solvents
	terpenes	●	RE-ENTRY KNI	Enviro. Solvents
	terpenes	●	RE-ENTRY RFS	Enviro. Solvents
	terpenes	●	RE-ENTRY VPS	Enviro. Solvents
	trichloroethylene	●	Royalene "DX"	Hanson
	trichloroethylene	●	Triklone	ICI
vapour degreasing of metals, mechanical and electrical/electronic parts				
CFC-113	aliphatic esters	●	AVD Solvating Agent	Petroferm
	chloriated blend		Oxsol 100	Oxychem
	methylene chloride		Methoklone GR	ICI
	perchloroethylene	●	Perklone MD	ICI

= High Global Warming Potential = CEPA Toxic = Volatile Organic Compound

= Waste Water = contains HCFC (ODS) = Long Atmospheric Life

Sector:		Solvents		
ODS	**Alternative**	**Notes**	**Trade Name**	**Supplier**
MCF	aliphatic esters	●	AVD Solvating Agent	Petroferm
	chloriated blend	☼	Oxsol 100	Oxychem
	methylene chloride	⚐	Methoklone GR	ICI
	perchloroethylene	⚐●	Perklone MD	ICI
	perchloroethylene	⚐●	Perklone MD	ICI
	trichloroethylene	⚐●	Triklone	ICI
vapour phase soldering				
MCF	avoid use of secondary vapour blanket by using batch equipment			
	non ODS vapour blanket, ie: perflurocarbon liquid	☼⧗	FC 71	3M
	non ODS vapour blanket, ie: perflurocarbon liquid	☼⧗	FC 70	3M
	non ODS vapour blanket, ie: perflurocarbon liquid	☼⧗	FC 5312	3M
	non ODS vapour blanket, ie: perflurocarbon liquid	☼⧗	FC [illegible]	3M

☼ = High Global Warming Potential ⚐ = CEPA Toxic ◎ = Volatile Organic Compound

≈ = Waste Water ◴ = contains HCFC (ODS) ⧗ = Long Atmospheric Life

ODS	Alternative	Notes	Trade Name	Supplier

Sector: ***Sterilants***

Note: for further information on alternative techniques, please refer to the report written by the Canadian Hospital Association and Environment Canada entitled "The elimination of CFCs in health care facilities", CHA Press, Ottawa, Ontario

Supplier List

3M Canada Inc.
P.O. Box 5757
London, Ontario
N6A 4T1
Phone: 1-800-364-3577

Allied Defense Industries Inc.
1487 Chain Bridge Road
Suite 304
Mclean, VA

Allied Signal Canada Inc.
50 Burnhamthorpe Road W.
Suite 904, Box 71
Mississauga, Ontario
L5B 3C2
Phone: (905) 276-9211
Fax: (905) 276-5711

American Pacific
P.O. Box 797
Henderson, NV

Anco Chemical
P.O. Box 2
85 Melmo Court
Maple, Ontario
L6A 1S3

Ansul Fire Protection Limimited
2416 Towne Blvd.
Oakville, Ontario
L6H 5X6

APCO Industries Co. Ltd.
10 Industrial St
Toronto, Ontario
M4G 1Z1
Phone: (416) 421-6161
Fax: (416) 421-1096

Ashland Chemicals Canada Inc.(Dow Supplier)
2620 Royal Windsor Dr
Mississauga, Ontario
L5J 4E7
Phone: (905) 823-7680
Fax: (905) 823-0023

Astra Pharma Inc.
1004 Middlegate Road
Mississauga, Ontario
L4Y 1M4

Astro-Polyfoam Ltd.
3939 Nashua Dr
Mississauga, Ontario
L4V 1R3

Buckeye Fire Equipment Co.
110 Kings Road
Kings Mt.,, NC

Canada Colors & Chemicals

(Dow Supplier)

Don Mills, Ontario
M3B 2R7
Phone: (416) 449-7750
Fax: (416) 449-1096

Cartier Canada Ltd.
1900 Minnesota Court
Mississauga, Ontario
L5N 5R5

Cartier Chemicals Ltd.
445 21st Avenue
Lachine, Quebec
H8S 3T8
Phone: (514) 637-4631
Fax: (514) 637-8804

Celfortec Inc.
116 Galaxy
Toronto, Ontario
M9W 4Y6

Chautauqua Metal Finishing Supply
31-T Water St
Jamestown, New York

Chemcentral Canada (Dow Supplier)
101 Duncan Mills Road, Suite #101
Don Mills, Ontario
M3B 1Z3
Phone: (416) 445-3225
Fax: (416) 445-5096

Chemtronics
975 Dillingham Road
Pickering, Ontario
L1W 3B2

Chinook Group
Environment Division
Lampton County Rd 28
Sombra, Ontario
N0P 2H0

Cimco Refrigeration
65 Villiers St.
Toronto, Ontario
M5A 3S1

CJ Smith Refrigeration Co. Ltd.
21 Sable St
Toronto, Ontario
M6M 3K8

Clean-Air Conditioning
975 Brock Road South, Unit 13
Pickering, Ontario
L1W 3A4
Phone: (905) 831-2520
Fax: (905) 420-0316

Colewest Marketing
#5, 3320 14 Avenue N.E.
Calgary, Alberta
T2A 6J4

D.R. Brenton Ltd.
2 Lakeside Park Drive, unit#2
Lakeside, Nova Scotia
B3T 1L7
Phone: (902) 876-7879
Fax: (902) 876-1976

Dalex Co. Limited (Dow Supplier)
157 Adesso Drive
Concord, Ontario
L4K 2L9
Phone: (905) 738-2070
Fax: (905) 738-6610

Dow Chemical Canada Inc.
20 Carlson Court
Etobicoke, Ontario
M9W 6V4
Phone: (416) 674-3569
Fax: (416) 674-5014

Drew Chemical Ltd.
525 Finley Avenue
Ajax, Ontario
L1S 2E5

DuPont
P.O. Box 2200 Streetsville
Mississauga, Ontario
L5M 2H3

Duracool Ltd.
10260-21 Street NW
Edmonton, Alberta
T6P 1W4
Phone: (403) 449-4777
Fax: (403) 449-4766

Elf Atochem
700 Third Line
Oakville, Ontario
L6J 5A3
Phone: (905) 827-9841
Fax: (905) 827-7913

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Oakville, Ontario
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Phone: (905) 827-9841
Fax: (905) 827-7913

Environment Speciality Products
841 Brock Road South
Pickering, Ontario
L1W 3J2
Phone: 1-800-495-4062
(905) 420-6300
Fax: (905) 420-6567

Environmental Solvents Corporation
1840 Southside Blvd.
Jacksoville, Florida

Grace Metalworking Fluids
P.O. Box 80034
Burlington, Ontario
L7L 6B1

Great Lakes Chemical Co.
Hwy 52 NW, P.O. Box 2200
West Lafayette, IN

Great Lakes Chemical Corp.
350 Progress Avenue
Scarborough, Ontario
M1P 2Z4
Phone: (416) 297-8899

Greencool Canada Inc.
351 Steelcase Road, West, Unit #3
Markham, Ontario
L3R 4H9
Phone: (905) 415-1607
1-800-463-8476
0092
Fax: (905) 415-1609

Halotron Inc.
3770 Howard Hughes Parkway
Suite 300
Las Vegas, NV

Hanson Inc.
45 Vansco Rd
Toronto, Ontario
M8Z 5J7

HC-Tech
50 Biggar Avenue
Hamilton, Ontario
L8L 3Z4

Hedley Pacific Ventures Ltd.
Suite 1540-800 West Pender St.
Vancouver, BC
V6C 2V6

Hoechst Canada Inc.
4045 Côte Vertu
Montréal, Québec
H4R 1R6
Phone: 265-0092

ICI Canada Inc.
90 Shepard Avenue E.
PO Box 200, Station A
North York, ON
M2N 6H2
Phone: (416) 229-7120 or 1-800-265-

Fax: (416) 229-7440

ICOR
2351 Kentucky Ave,
Indianapoulos, Ind.

Imperial Oil, Chemicals Division
111 St. Clair Avenue West
PO Box 4029, Station A
Toronto, ON
M5W 1K3
Phone: (416) 968-4642
Fax: (416) 968-4256

IPI Canada
440 Conestogo Road
Waterloo, Ontario
N2L 4E2

ISP (Canada) Inc.
1075 The Queensway East
Mississauga, Ontario
L4Y 4C1
Phone: (905) 277-0381
(800) 465-5094
Fax: (905) 272-0552

ISP Technologies Inc.
1361 Alps road
Wayne, NJ

J. R. Vigneault Inc.
5 Rue Gegneau
Sept-Iles, Quebec
G4R 3R4
Phone: (418) 962-9457
Fax: (418) 962-9461

Kuusport Manufacturing Limited
450 Tapscott Road
Scarborough, Ontario
M1B 1Y4
Phone: (416) 298-7724
Fax: (416) 298-7346

LPS Laboratories, Ltd.
378 Hersey Crescent
Bolton, Ontario
L7E 4A1
Phone: 1-800-241-8334
Fax: 1-800-543-1563

Magnus Chemicals Limited
190 Boul. Industriel
Boucherville, Québec
J4B 2X3
Phone: (514) 655-1344
Fax: (514) 655-5428

Marioff
P.O. Box 25
FIN-01511 Vantaa, Finland

MG Chemicals
9347 - 193 Street
Surrey, BC
V4N 4E7
Phone: (604) 888-3084
Fax: (604) 888-7754

Monroe Air Technology
522 West Sectond St.
Bloomington, Indiana

National Refrigeration Inc.
Rhone Poulenc Distributors
11401 Roosevelt blvd.
Philadelphia, PA

North American Fire Guardian Technology Inc.
304 - 700 West Pender Street
Vancouver, BC
V6C 1G8
Phone: (604) 684-7374
Fax: (604) 684-7415

Oxychem
5761 Underwood Road
pasadena, TX

Peca
1441 plainfield Avenue
Janesville, WI

Pennzoil Products Company
Pennzoil Place
Houston, Texas

Petroform Inc.
1700, 407 2nd Street South West
Calgary, Alberta
T2P 2Y3

Powsus Inc.
1178 Wisteria Drive
Malvern, PA

Praxair Canada Inc.
1 City Centre Drive
Mississauga, Ontario
L5B 1M2
Phone: (905) 803-1632
Fax: (905) 803-1696

Rawn Company Inc.
1300 South River Street
Spooner, WI

Releasall Target International Inc.
165 Chemin bates
Montreal, Quebec
H3S 1A1
Phone: (514) 735-3272
Fax: (514) 735-8550

Rhone-Poulenc
Pharma Inc.
8580 Esplanade
Montreal, Quebec
H2P 2R9

Securiplex Technologies Inc.
549 Meloche Avenue
Dorval, Quebec
H9P 2W2

Solvay Performance Chemicals
41 W. Putnam Avenue
Greenwich, CT

Stanchem Inc.
(Chemical Distributor)
43 Jutland Road
Etobicoke, Ontario
M8Z 2G6
Phone: (416) 259-8231
Fax: (416) 259-5333

Tech Spray Inc.
P.O. Box 949
Amarillo, Texas

Phone: (416) 259-8231
Fax: (416) 259-5333

Technical Chemical Co
10737 Spangler Rd
Dallas, TX

Terpene Technologies Ltd./
Storchem Inc.
3600 billings Court
Burlington, Ontario
L7T 3H8
Phone: (905) 639-9700
Fax: (905) 639-5244

Tomen Canada Inc.
TD Bank Center
P.O. Box 338
Suite 3312
Toronto, Ontario
M5K 1K7
Phone: (416) 868-1130
Fax: (416) 868-6539

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M1W 2P3
Phone: (905) 676-9000
Fax: (905) 676-1554

TRJ Control Systems Ltd.
775 The Queensway
Toronto, Ontario
M8Z 1N1

Université de Moncton
Research Center for Energy Conversion

Moncton, NB
E1A 3E9

Van Waters & Rogers Ltd. (Dow Supplier)
64 Arrow Road
Weston, Ontario
M9M 2L9
Phone: (416) 740-5300
Fax: (416) 740-8727

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4387 Corporate Drive
Burlington, Ontario
L7L 5T9

Werner's Wholesale Group
Box 34212
Vancouver, BC
V6J 4V6

White Radio Ltd.
940 Gateway Drive
Burlington, Ontario
L7L 5K7
Phone: (905) 632-6894
Fax: (905) 632-6981

Wickens Industrial Limited
8193 Fourth Line
Milton, Ontario
L9T 2X9
Phone: (905) 875-2182
Fax: (905) 875-2681

York International Co.
375 Matheson Blvd. East
Mississauga, Ontario
L4Z 1X8
Phone: (905) 890-6812
Fax: (905) 890-7618

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